

CLAIMS

1. An oil-impregnated sintered bearing comprising:

a bearing hole formed in the bearing body made of a sintered metal to support a rotating shaft by an inner surface thereof as a friction surface;

wherein the bearing hole includes a journal part that has a constant diameter, and enlarged diameter parts that are provided on both sides of the journal part in the longitudinal direction thereof, respectively, so as to be connected with the journal part.

2. The oil-impregnated sintered bearing according to claim 1,

wherein the enlarged diameter parts are provided on both sides of the journal part in the longitudinal direction thereof, respectively,

a taper angle with respect to the longitudinal direction of one enlarged diameter part which is provided on one side of the journal part and a taper angle with respect to the longitudinal direction of the other enlarged diameter part which is provided on the other side of the journal part are equal to each other, and

a line obliquely extending along an inclined surface

of one enlarged diameter part is arranged parallel to a line obliquely extending along an inclined surface of the other enlarged diameter part, and a distance between the lines is substantially equal to the diameter of the rotating shaft.

3. The oil-impregnated sintered bearing according to claim 1,

wherein a distance between the line obliquely extending along an inclined surface of the enlarged diameter part and the journal part facing the inclined surface of the enlarged diameter part across the middle of the bearing body is substantially equal to the diameter of the rotating shaft.

4. The oil-impregnated sintered bearing according to any one of claims 1 to 3,

wherein the taper angles with respect to the longitudinal direction of the enlarged diameter parts are  $3^{\circ}$  or less.

5. The oil-impregnated sintered bearing according to claim 1,

wherein the enlarged diameter parts are formed stepwise so that the taper angles with respect to the longitudinal direction of the enlarged diameter parts are

different from each other, and

the enlarged diameter parts positioned farther from the journal part has a larger taper angle.

6. The oil-impregnated sintered bearing according to claim 5,

wherein the enlarged diameter parts are formed so that the difference between the taper angles of adjacent enlarged diameter parts is  $3^{\circ}$  or less.

7. A method of manufacturing an oil-impregnated sintered bearing which includes a bearing hole formed in the bearing body made of a sintered metal to support a rotating shaft, the bearing hole including a journal part of which an inner surface as a friction surface has a constant diameter and enlarged diameter parts that are provided so as to be connected with the journal part and are formed in a tapered shape having diameters to be enlarged toward the tips thereof, comprising:

forming a bearing hole that includes the journal part having a constant diameter by pressing an inner circumferential surface of a cylindrical sintered body completely sintered; and

forming the enlarged diameter parts so as to be

connected with the journal part by re-pressing the inner circumferential surface of the cylindrical sintered body.

8. The method of manufacturing an oil-impregnated sintered bearing according to claim 7,

wherein substantially cone-shaped press dies each having a base having a diameter larger than the inner diameter of the sintered body are used for forming the enlarged diameter parts.

9. The method of manufacturing an oil-impregnated sintered bearing according to claim 8,

wherein the press dies are simultaneously inserted from both sides of the sintered body, respectively, and the tips of the press dies are pushed against the inner circumferential surface of the sintered body so as not to come into contact with each other.

10. An oil-impregnated sintered bearing which includes a bearing hole formed in the bearing body made of a sintered metal to support a rotating shaft, the bearing hole including a journal part of which an inner surface as a friction surface has a constant diameter and enlarged diameter parts that are provided so as to be connected with

the journal part and are formed in a tapered shape having diameters to be enlarged toward the tips thereof,

wherein the bearing hole that includes the journal part having a constant diameter by pressing an inner circumferential surface of a cylindrical sintered body completely sintered is formed; and

the enlarged diameter parts so as to be connected with the journal part by re-pressing the inner circumferential surface of the cylindrical sintered body is formed.